REMARKS

This is a full and complete response to the Office Action dated September 13, 2006.

Disposition of the Claims:

Claims 11-14, and 17-28 are currently pending in the application. No claims have been amended with this Reply.

All comments and remarks of record are herein incorporated by reference. Applicants respectfully traverse these rejections and all comments made in the Office Action. Nevertheless, in an effort to expedite prosecution, Applicants provide the following remarks regarding the cited references.

Remarks Regarding 35 U.S.C. §103(a)

Claims 11-14 and 17-28 stand rejected under 35 USC §103(a) as being unpatentable over **Nakamura et al.** (USP 4,468,453), hereinafter "**Nakamura**," in view of **Okamura et al.** (USP 6,783,715), hereinafter "**Okamura**". Applicants respectfully traverse this rejection.

The Examiner has stated that **Nakamura** teaches a phototoughening composition comprising:

(a) a conjugated diene monomer, having a molecular weight of 100,000 to 1,000,000 and block copolymers of the formula (A-B)n-Am, where A represents a thermoplastic nonelastomeric polymer, B represents an elastomeric polymer block having glass transition temperature of less that 10°C and having a molecular weight of 25,000 to 1,000,000, n is an integer from 1 to 10 and m is 0 to 1;

(b) an ethylenically unsaturated compound; and

(c) a photopolymerization initiator;

where the weight proportion of the component (a) relative to the total of the components (a), (b) and (c) being 30 to 98%;

the weight proportion of the component (b) relative to the total of the components (a), (b) and (c) being 2 to 70%; and
the weight proportion of the component (c) relative to the total of the components (a), (b) and (c) being 0.01 to 10%.

Suitable block copolymers of component (a) include polybutadiene and polyisoprene, wherein the block copolymers are no more than 90%. Component (b) may comprise esters of acrylic acid, methacrylic acid or may comprise trimethylolpropane triacrylate. The photosensitive composition may also comprise at least one polymer consisting of 1,2 addition butadienes with a molecular weight of 70,000 to 500,000.

The Examiner further states that the suitable block A and B polymers include polyisoprene and polybutadiene, and that the block copolymers may be mixed with polystyrene-isoprene-polystyrene. The Examiner acknowledges the **Nakamura** does not teach a random copolymer block of (I/B) of predominately isoprene and butadiene.

The Examiner, however, states that **Okamura** teaches photosensitive materials with thermoplastic elastomers comprising random copolymers of isoprene and butadiene. Further, the Examiner states that since the material comprises random copolymers of isoprene and butadiene, it is expected that the ratios are random in the amounts inclusive of 20:80 and 80:20, and since the random copolymers would have the same weight and ratio limitations as claimed, they would be expected to meet the molar ratio limitations as claimed.

According to 35 U.S.C. § 103, in order to establish a prima facie case of obviousness, there must be (1) some suggestion or motivation to modify the references, (2) reasonable expectation of success and (3) the prior art reference must teach or suggest all of the claim limitations. *See* MPEP §2143. Applicants respectfully submit that the cited references, either alone or in combination, do not disclose or suggest the claimed invention.

Applicants respectfully assert that one skilled in the art would not be motivated to combine **Nakamura** with **Okamura** to reach the presently claimed invention.

Applicants' claimed invention is directed toward **"photopolymerizable"** compositions and flexographic printing plates. Photopolymerizable printing plates are known for use in making flexographic printing forms. Flexographic printing is a common way to print on corrugated containers, folding cartons, multiwall sacks, paper sacks, plastic bags, milk and beverage cartons, disposable cups and containers, labels, adhesive tapes, envelopes, newspapers, wrappers, etc.

Generally, the printing surface is produced by exposing a photopolymerizable layer image-wise to actinic radiation. *See Application*, page 1, paragraph 1; page 11, paragraph 53. The part of the printing surface which is exposed to the radiation photopolymerizes (or is cured), while the unexposed portion of the surface remains unaffected. As a result, the unexposed portion of the printing surface is generally softer and more readily soluble. Therefore, the non-photopolymerized areas of the printing plate can be washed off with suitable solutions. *See Application*, page 11, paragraph 55. The photopolymerized portion will then be in the form of the image for use as the printing surface. Applicants would like to point out that the presently claimed block copolymer is a component of the currently claimed photopolymerizable composition.

Applicants respectfully assert that the proposed combination of references does not suggest the instant claimed invention. Moreover, the combination has nothing to do with photopolymerization. **Okamura** states that recycled molded plastic parts are to be used for shielding photosensitive material. *See* **Okamura**, Col. 1, lines 14-26. This is not applicants' claimed invention. Many of the aspects of claim 11 are entirely absent. For example, the combination fails to disclose or suggest at least : (i) "photopolymerization" (claim 11, preamble); (ii) "one or more photopolymerizable ethylenically unsaturated low molecular weight compounds" (see claim 11b); and (iii) "from 0.1 to 10 % by weight, based on the total photomerizable composition of one or more polymerization initiators" (see claim 11c). Absent these aspects of claim 1, the combination cannot be considered to suggest the claims.

In fact, the thermoplastic elastomer disclosed in **Okamura** is a plastic covering of a disposable camera to protect a photosensitive material, specifically a camera lens, from light and other elements. *See id.* Thus, the combination does not form a prima facie case of obviousness and applicants respectfully request that this rejection be withdrawn.

Further, **Okamura** is not directed to the use of photopolymerizable compositions, but instead intended to facilitate blocking light. Applicants further respectfully submit that **Okamura** is not pertinent to the Applicants' field of endeavor and is therefore non-analogous art. *See* MPEP 2141.01(a). For at least this reason as well, the combination does not form a prima facie case against the claims and should be withdrawn.

Furthermore, Applicants respectfully assert that **Okumara** teaches away from the instant invention. *See* MPEP 2145 X.D.1. **Okamura** states that a feature of the thermoplastic elastomer is to facilitate the dispersibility of the added light shielding material. *See* **Okamura**, Col. 6, line 8. However, Applicants' application discloses that "[t]he incorporation of both isoprene and butadiene into the rubber block gives the unexpected result of excellent transparency...." *See Application*, page 3, paragraph 11. Applicants respectfully submit that transparency in photopolymerizable compositions helps reduce the scattering of UV light in the composition, which results in the ability to create a more precise flexographic printing form. Applicants respectfully assert that one of ordinary skill in the art who finds it advantageous to have excellent transparency would not look to **Okamura**, which does not disclose photopolymerizable compositions, but discloses thermoplastic elastomers that are used to facilitate blocking light.

Applicants further assert that one of ordinary skill would not be motivated to modify **Nakamura** in view of **Okamura** because they are not related to the same technical art. Applicants respectfully submit that **Nakamura** is directed to a dry process for forming an image on a photosensitive composition. *See* **Nakamura**, column 1, lines 5-21. **Nakamura** indicates that a photosensitive composition is exposed to radiation and the unexposed areas are selectively removed by use of abrasive material rather than through aqueous or organic solvents. *See id.* As **Okamura** is directed to the use recycled molded plastic parts for shielding light, Applicants respectfully assert that one of ordinary skill in the art would not therefore modify **Nakamura** in view of **Okamura**.

The Examiner contends that **Okamura** teaches photosensitive materials with thermoplastic elastomers comprising random copolymers of isoprene and butadiene. Applicants respectfully disagree.

Okamura in Col. 7, lines 1-4 into Col. 6, lines 57-61. Col. 6, lines 57-61 disclose in pertinent part, "The thermoplastic elastomer is random, block, and graft copolymer of styrene-type monomer…and other monomers…, such as…diolefin…."

Furthermore, Col. 7, lines 1-4 disclose in pertinent part, "As diolefine, there…are conjugated dienes including butadiene, isoprene and the like."

Applicants respectfully assert that when **Okamura** refers to a "random, block, and graft copolymer", it is referring to the type of styrene polymer as a whole. Therefore, a random styrenic copolymer will have styrene and another monomer, such as a butadiene, randomly distributed throughout the copolymer. In contrast, a block styrenic copolymer will have different blocks within the polymer of either styrene, or another monomer, with each block being substantially a homopolymer.

This reading is further evidenced by **Okamura's** examples of the preferred styrene-type elastomers. Col. 7, lines 54-63. **Okamura** discloses the following styrene-type elastomers:

*styrene-butadiene-styrene block copolymer resin

*styrene-butadiene copolymer resin

*styrene-isoprene copolymer resin

*styrene-isoprene-styrene block copolymer, and their hydrogenezations

*styrene-ethylene-butylene-styrene block copolymer resin

*styrene-ethylene-butylene block copolymer resin

*styrene-ethylene-propylene block copolymer resin

*styrene-ethylene-propylene-styrene block copolymer, and the like

*Especially preferable is styrene-butadiene copolymer among them.

As can be seen, none of the listed styrenic copolymers have a mixed isoprene and butadiene polymeric block. Therefore, it is not contemplated or suggested in **Okamura** that there should be a mixed midblock, and furthermore, that such midblock should be a mixture of isoprene and butadiene.

In view of the foregoing, Applicants respectfully assert that no prima facie case of obviousness has been shown, and therefore respectfully request the 35 USC §103(a) rejection be withdrawn.

Conclusion

Having addressed all issues set out in the Office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

Respectfully submitted,
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